

CLAIM AMENDMENTS

1. (Original) A spiral inductor formed with n levels ($n \geq 2$) of electroconductive film layers disposed on a semiconductor substrate with insulators inserted therebetween, comprising:

a spiral interconnect formed by disposing spirally the i -layer ($2 \leq i \leq n$) electroconductive film layers electrically connected and vertically adjacent to each other; and

an underpass interconnect that is formed with the k -layer ($1 \leq k \leq n-1$) electroconductive film layers electrically connected and vertically adjacent to each other, and that is electrically connected with the internal end of the spiral interconnect,

wherein in the portion where the spiral interconnect and the underpass interconnect intersect each other, the j ($1 \leq j < i$) layers vertically adjacent to each other are used as the electroconductive film layers forming the underpass interconnect of the electroconductive film layers forming the spiral interconnect, and

the narrowest part in the portion of the spiral interconnect intersecting with the underpass interconnect is wider than the narrowest part in the portion of the spiral interconnect not intersecting with the underpass interconnect.

2. (Currently Amended) ~~A~~ The spiral inductor according to Claim 1, comprising a second underpass interconnect formed with h levels ($1 \leq h \leq n-1$) of electroconductive film layers electrically connected and vertically adjacent to each other, and that is electrically connected with the portion of the spiral interconnect other than both ends of the spiral interconnect;

wherein in the portion where the spiral interconnect and the second underpass interconnect intersect with each other, the m -layers ($1 \leq m < i$) vertically adjacent to each other are used as the electroconductive film layers forming the underpass interconnect of the electroconductive film layers forming the spiral interconnect, and

the narrowest part in the portion of the spiral interconnect intersecting with the second underpass interconnect is wider than the narrowest part in the portion of the spiral interconnect not intersecting with the underpass interconnect.

3. (Currently Amended) A transformer that is a combination of the two spiral inductors each of which is described in Claim 1 ~~or Claim 2~~.

4. (New) A transformer that is a combination of the two spiral inductors each of which is described in Claim 2.

5. (New) A spiral inductor including
n levels ($n \geq 2$) of electrically conductive films and insulators inserted between pairs of the levels of the films and including a continuous spiral interconnect having a spiral shape, disposed in an i-th layer ($2 \leq i \leq n$) of the electrically conductive films, and electrically connected by contact plugs to electrically conductive films in a layer adjacent to the i-th layer; and

a first underpass interconnect including a kth layer ($1 \leq k \leq n-1$) of the electrically films that is electrically connected to an adjacent electrically conductive film, and that is electrically connected through contact plugs to an internal end of the spiral interconnect, wherein,

where the spiral interconnect and the first underpass interconnect are opposite each other, j ($1 \leq j < i$) layers of the electrically conductive film are part of the first underpass interconnect, and

the spiral interconnect opposite the first underpass interconnect is wider than the parts of the spiral interconnect not directly opposite the first underpass interconnect.

6. (New) The spiral inductor according to Claim 5, comprising a second underpass interconnect including h levels ($1 \leq h \leq n-1$) of electrically conductive films electrically connected by contact plugs to an electrically conductive film in an adjacent layer, and electrically connected to a portion of the spiral interconnect, but not to ends of the spiral interconnect, wherein,

where the spiral interconnect and the second underpass interconnect are opposite each other,

m layers ($1 \leq m < i$) of the electrically conductive films adjacent to each other are the first underpass interconnect, and

the spiral interconnect opposite the second underpass interconnect is wider than the parts of the spiral interconnect opposite the first underpass interconnect.

7. (New) A transformer that is a combination of the two spiral inductors each of which is described in Claim 5.

8. (New) A transformer that is a combination of the two spiral inductors each of which is described in Claim 6.